



Case Report

Asymmetric bilateral hip dislocations and unilateral femoral head fracture: A CASE report

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ARTICLE INFO

Keywords:

Bilateral hip dislocations

Femoral head fracture

Motor vehicle accident

ABSTRACT

Hip is a stabilized joint due to the surrounding ligaments, and muscles, which can dislocate as a result of high energy trauma, high-level falls, and motor vehicle accidents. Traumatic hip dislocations can either be isolated or simultaneously with acetabular and proximal femur fractures. At the same time injury of sciatic, femoral or obturator nerves can be seen. However, avascular necrosis of femoral head, posttraumatic osteoarthritis, and heterotopic ossifications can be seen as prolonged complications. The period prior to the reduction, severity of the trauma, and performing open or close reductions are the major contributors of the prognosis. As an extremely rare entity, bilateral asymmetrical hip dislocations are reported as the 0.01–0.02% of all joint dislocations. Accompanying proximal femoral fractures are pointed out 17%, one of them is femoral head fractures which are orthopedic emergencies that need to be fixed with surgery. However, high incidence of AVN is reported at the end of 2 years even if following early reductions. In our article, traumatic bilateral asymmetric hip dislocations and femoral head fracture is described in the context of a diagnosis, treatment and follow-up.

Introduction

Hip is a stabilized joint due to the surrounding ligaments, and muscles, which can dislocate as a result of high energy trauma, high-level falls, and motor vehicle accidents [1,2].

Traumatic hip dislocations can either be isolated or simultaneously with acetabular and proximal femur fractures. At the same time injury of sciatic, femoral or obturator nerves can be seen. However, avascular necrosis of femoral head, posttraumatic osteoarthritis, and heterotopic ossifications can be seen as prolonged complications [3,4,5].

As an extremely rare entity, bilateral asymmetrical hip dislocations are reported as the 0.01–0.02% of all joint dislocations [6,7,8,9]. Since the reported prevalence of asymmetrical dislocations is 17% of bilateral hip dislocations and only 9% of them presented with anterior obturator and posterior dislocation in the literature [8,9].

We here presented 3 years follow up a rare case of asymmetrical bilateral hip dislocation with unilateral femoral head fracture in a 49 year old female as a result of motor vehicle accident.

Case report

A-49-year-old female who was involved to a motor vehicle accident approximately 2 h ago, was admitted to the emergency room

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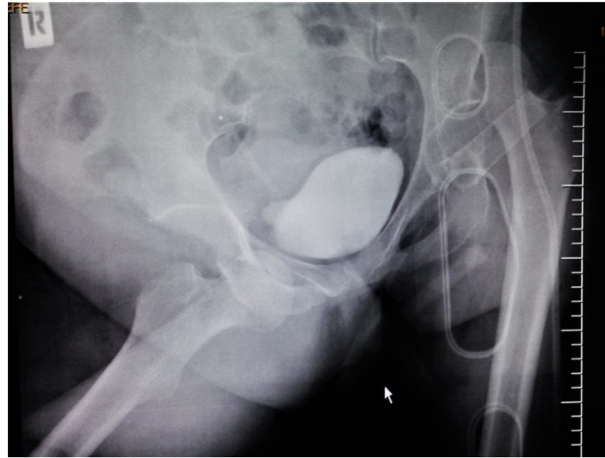


Fig. 1. X-ray in the emergency.

of our hospital. Her initial physical examination revealed lower limbs discrepancy, painful and limited hip joint movement bilaterally. Her right hip had an extension, abduction, and lateral rotation deformity, while her left hip was in adduction, and medially rotated. There was no neurovascular deficit and other system examinations were unremarkable. The radiological evaluation of the patient demonstrated bilateral traumatic hip dislocations in which the right hip was dislocated through the anterior and obturator foramen, while the left hip was dislocated posterior (Fig. 1). Both hips were reduced under general anesthesia in the operation room using the axial traction with varying degrees of flexion, abduction and adduction depending on the location of the femoral head in relation to the pelvis. Both hips were stabilized eventually. Anatomical reduction of both hips was confirmed by testing range of motion and fluoroscopy in operation room (Fig. 2). Computerized tomography screening obtained following the initial surgical procedure and Pipkin type 1 femoral head fracture identified. Second operation was offered to the patient for the stabilization of the avulsed part of the femoral head (Fig. 3). Since she refused to undergo any other operation, conservative treatment procedures were applied.

Quadriceps strengthening exercise program was administered to the patient in the postoperative 2nd day and no complications occurred in the early period. She didn't undergo any skeletal or skin traction during the postoperative 1st week. Within the 2nd week, passive and active hip joint movements were begun. She was permitted to walk with partial weight-bearing using walker from the 6th week, while a walk with complete weight-bearing was allowed from the 10th week.

During the follow-up visits, an increase in the pain with the limitation of the range of motion in the left hip was determined in the 1st year of the accident. Since the patient was symptomatically deteriorated in the postoperative 2nd year, and the magnetic resonance imaging (MRI) revealed avascular necrosis in the avulsed part of the left femoral head and arthrosis of joint, total joint arthroplasty was performed to the left hip of the patient. (Figs. 4–5). A total recovery in the overall symptoms of the patient was seen in the postoperative 3rd year follow-up visit without any osteoarthritic changes in her right hip.



Fig. 2. X-ray after close reduction.



Fig. 3. Coronal CT section after close reduction.

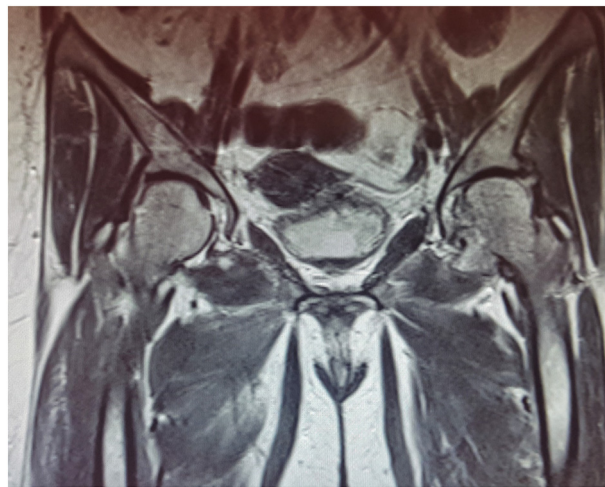


Fig. 4. MRI screening 2 years after close reduction. AVN of left femoral head.

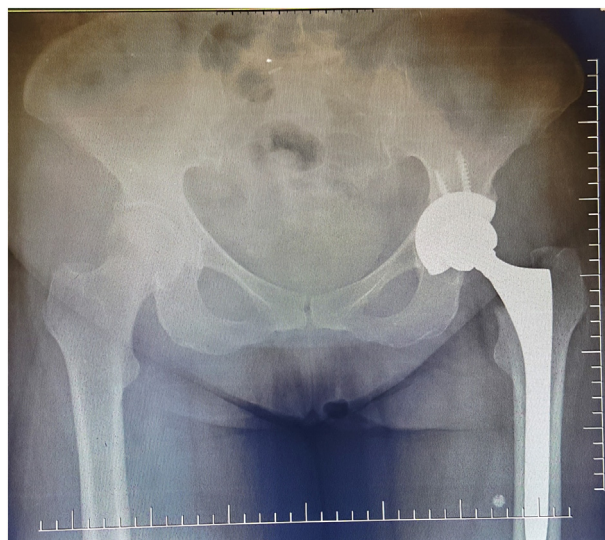


Fig. 5. X-ray after left hip arthroplasty.

Discussion

Traumatic hip dislocations are true orthopedic emergencies that encounter 2–5% of all dislocations [10]. Prognosis of anterior dislocations are better than posterior dislocations, in which the period prior to the reduction, severity of the trauma, and performing open or close reductions are the major contributors of the prognosis [11]. The reported frequencies of avascular necrosis in terms of early or late reduction are 6–27% and 48%, respectively [12]. Dlabach et al. reported that the percentage of arthritis after post-traumatic hip dislocations is 23.2% [5].

As an extremely rare entity, bilateral asymmetrical hip dislocations are reported as the 0.01–0.02% of all joint dislocations and accompanying proximal femoral fractures are pointed out %17 [9].

The majority of bilateral asymmetric hip dislocations occur in motor vehicle accidents (59%); the majority of those reported injuries occur in passengers [13]. In our case similarly it was a motor vehicle accident but interestingly she was lying on the back seat at time of accident and one of the legs was in adduction and the other one was abduction position. That is the typical hips position for bilateral asymmetric hip dislocations caused by direct anterior forces.

Femoral head fracture is an orthopedic emergency that need to be treated with surgery. Outcomes of large population based studies indicate that urgent reduction of the femoral head within 24 h, and within 6 h if possible 29,36,51. However, high incidence of AVN is reported at the end of 2 years, even if following early reductions, cervical blood supply of femoral head, traumatic injury of ligamentum teres and ischemia during the dislocation can lead this [14,15,16]. Since our patient denied to undergo second surgery, her treatment had to be carried out conservatively. She suffered from coxarthrosis which developed at the end of 2nd year and she had to undergo total hip replacement surgery.

Suggesting our overall results, Yang and his colloquies reported that the frequency of degenerative arthritis following traumatic hip dislocation is 33% in 10 years, and 75% in 30 years, while the frequency of coxarthrosis varies between 17% to 48% due to the severity of trauma and follow-up periods [17].

In conclusion

Bilateral asymmetric hip dislocations are one of the extremely rare orthopedic emergencies. Thorough physical and radiological examinations to diagnose the accompanying complications and close reduction as soon as possible are very important for prognosis. Detailed radiologic evaluation after the reduction is crucial to identify undiagnosed complications.

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